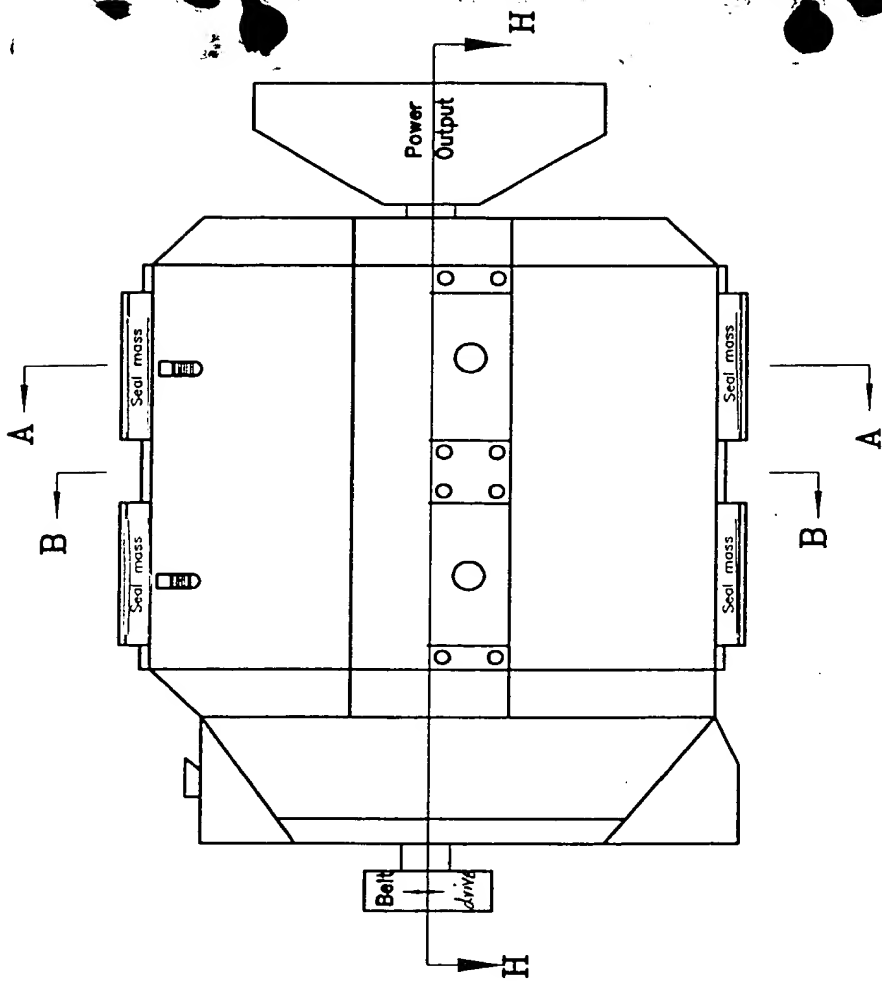


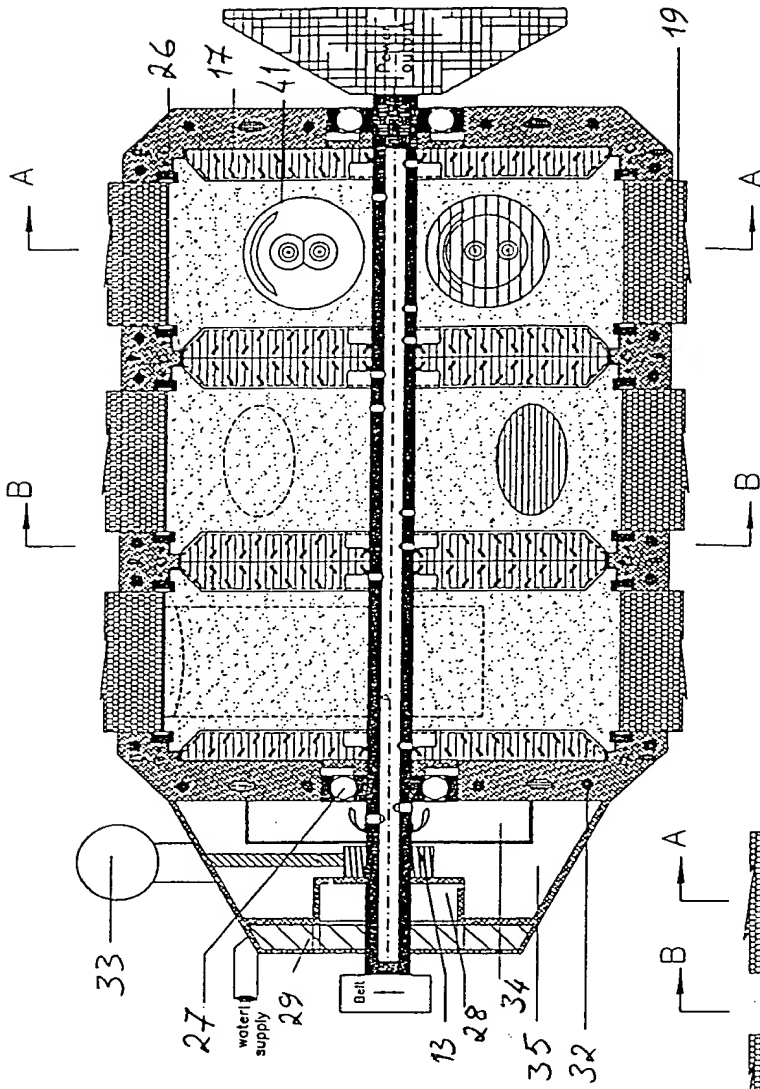
TYPICAL SHAPE - FRONT VIEW

F1b



TYPICAL SHAPE - SIDE VIEW

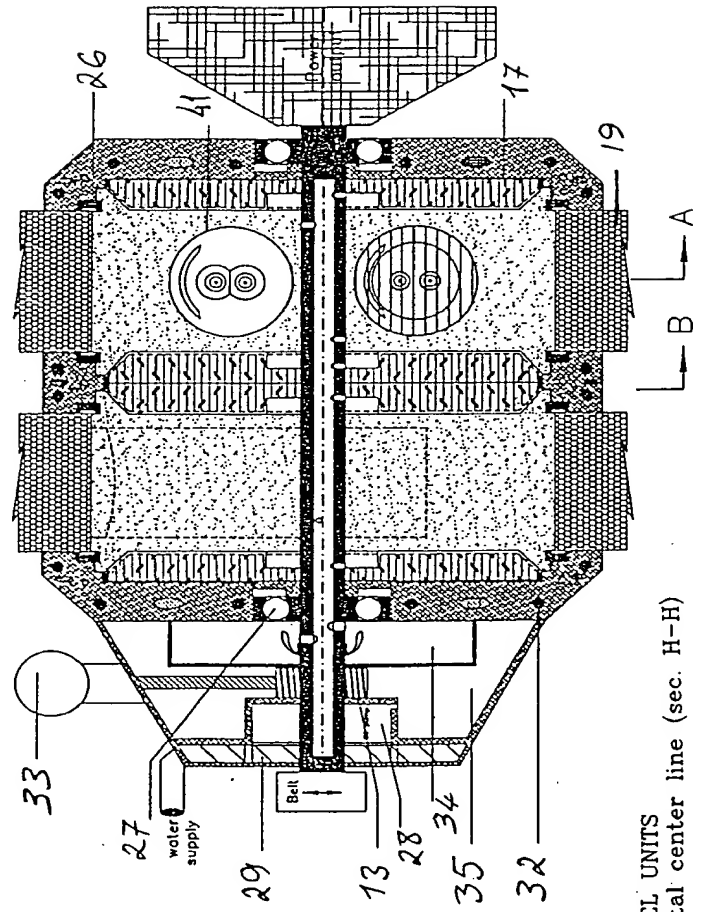
F1a



THREE POWER WHEEL UNITS  
Section plan in horizontal center line (sec.H-H)

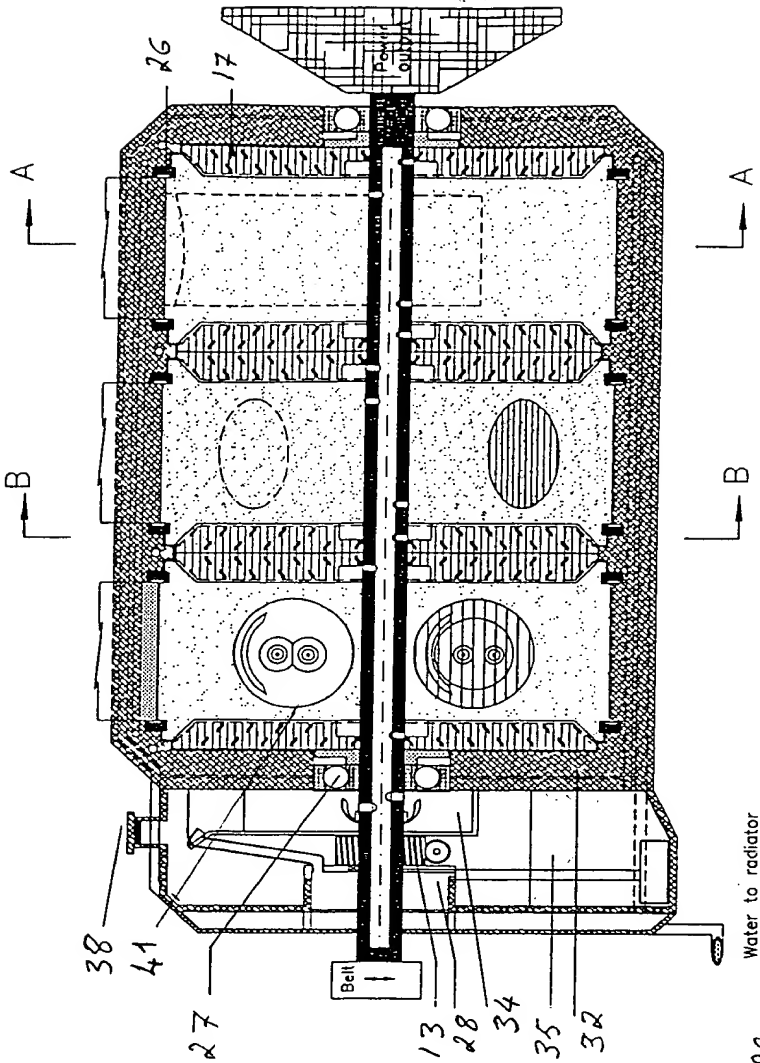
F-2b

Fig-2/25



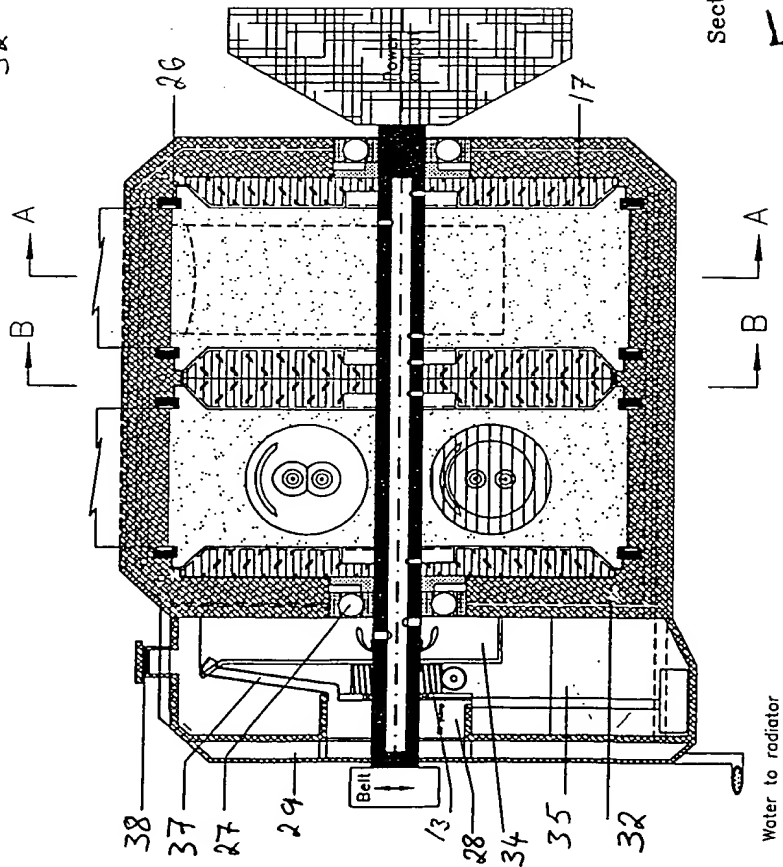
TWO POWER WHEEL UNITS  
Section plan in horizontal center line (sec. H-H)

F-2a



THREE POWER WHEEL UNITS  
Section plan at vertical center line (sec. V-V)

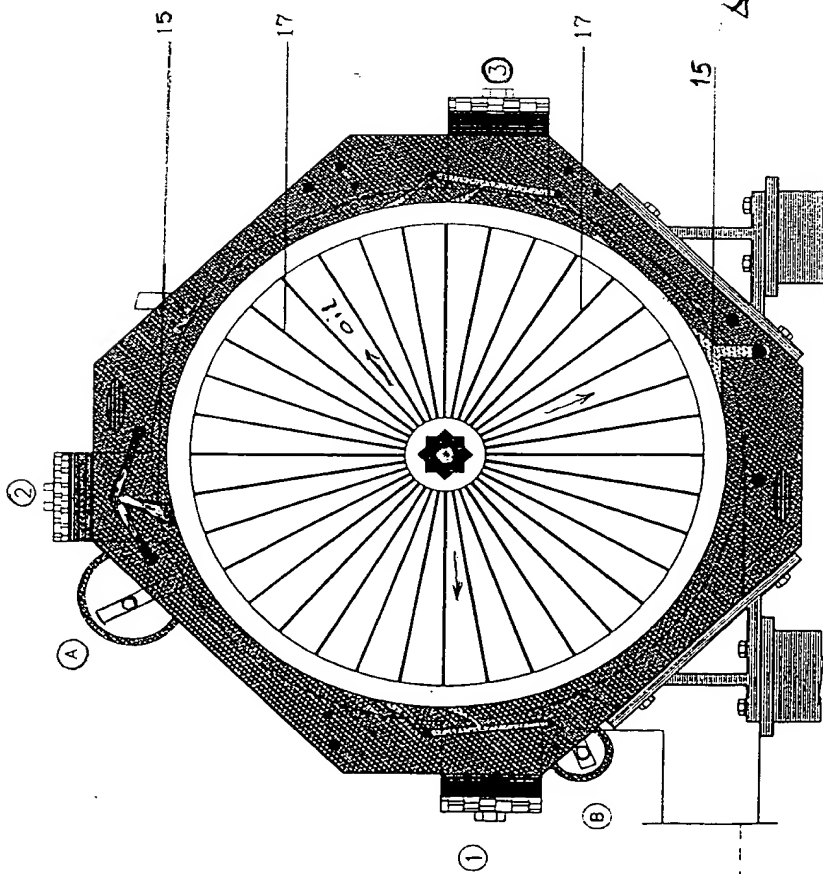
F-3b



TWO POWER WHEEL UNITS  
Section plan at vertical center line (sec. V-V)

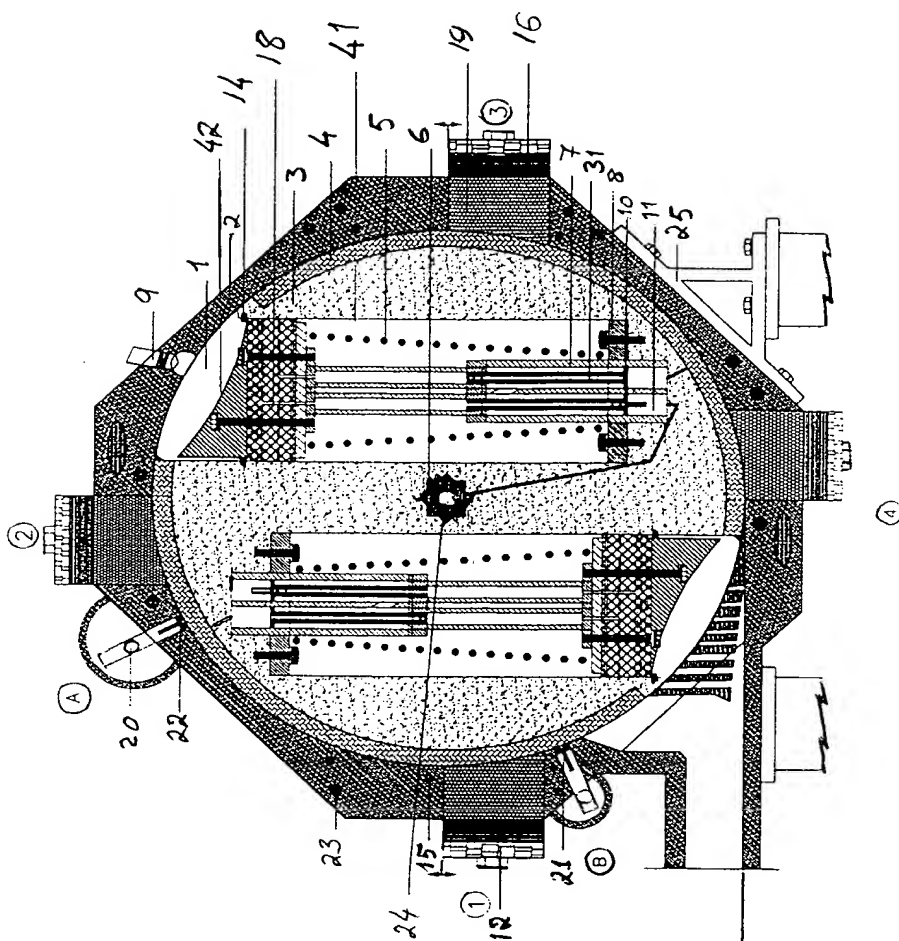
F-3a

Fig-3/25



SECTION B - B

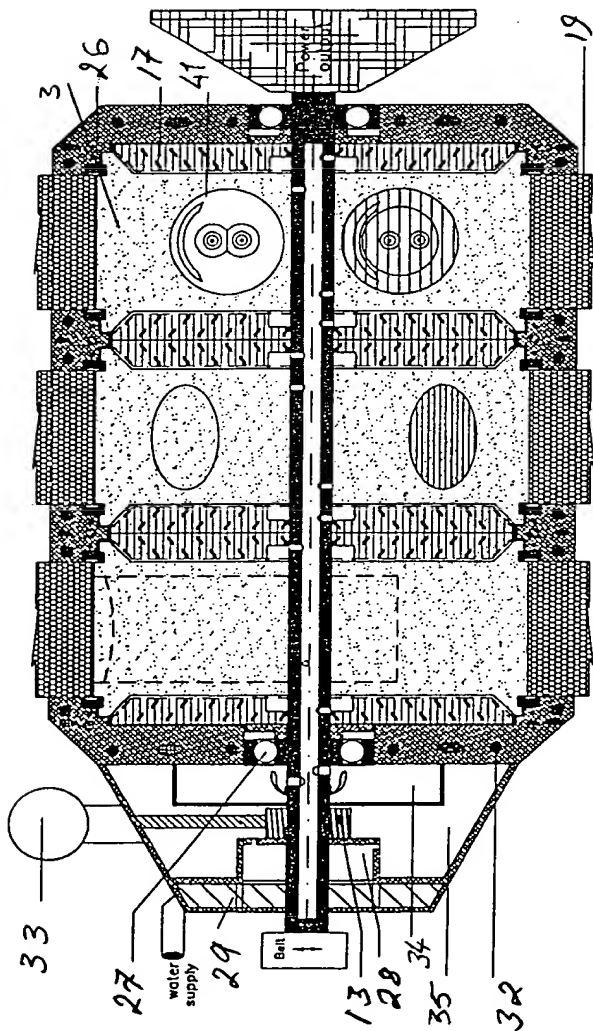
F-4b



SECTION A - A

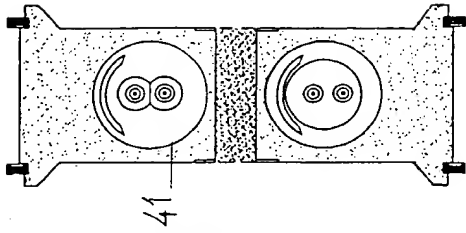
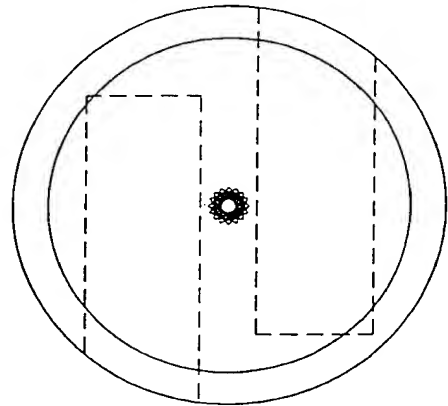
F-4a

- Fig-4/25

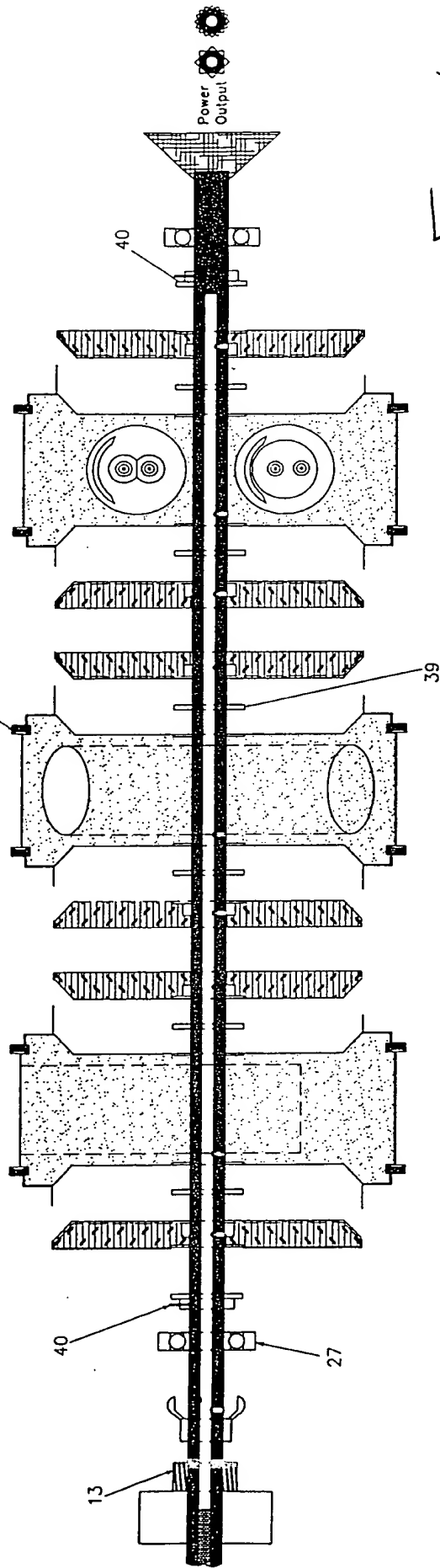


Section - Plan in horizontal C.L.

F-5a



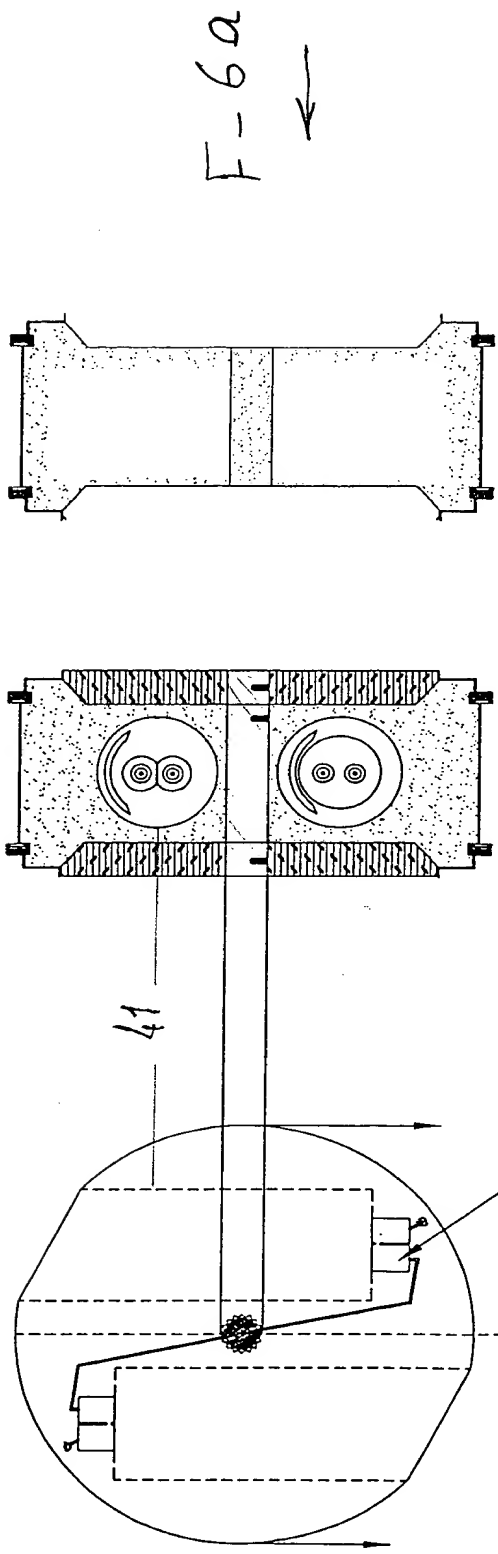
No. 3  
F-5b



ROTATING PARTS ANALYSIS ON THE CRANK

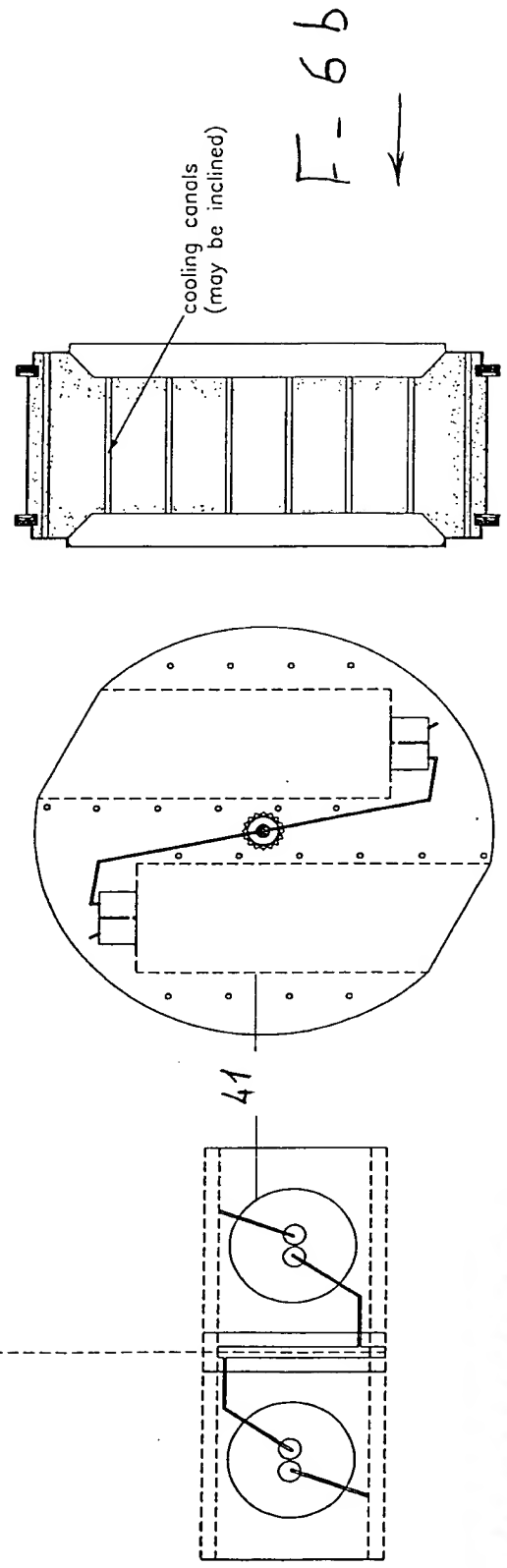
Fig-5/25

F-5c



Power wheel unit

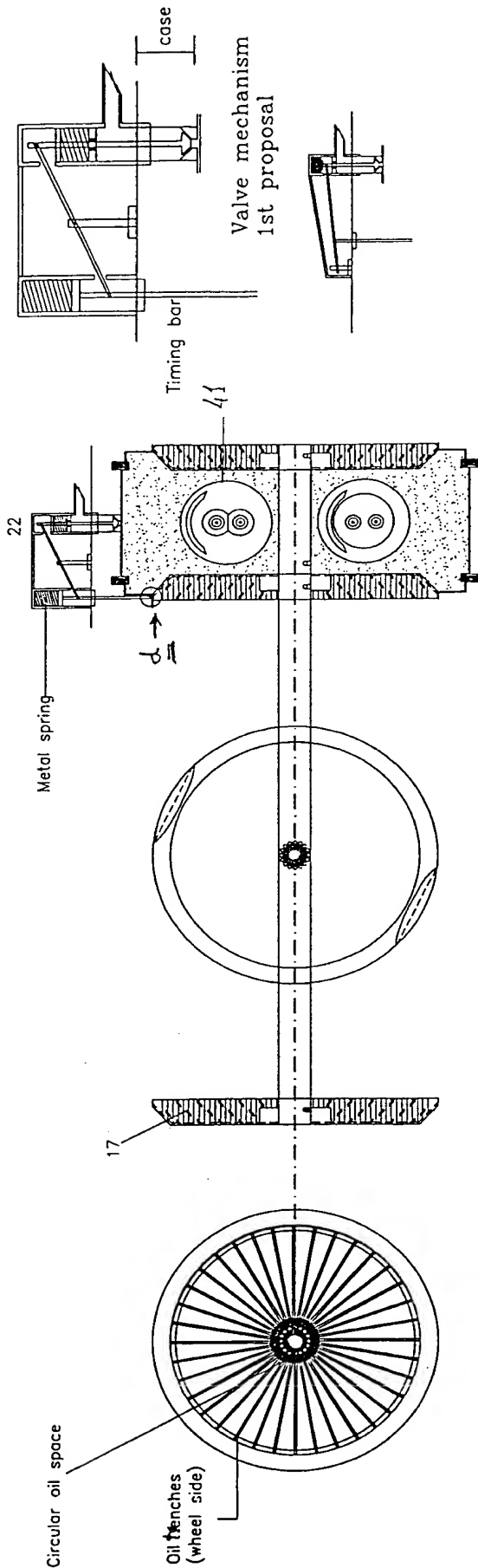
Oil sump feeder for piston



PISTON INLET-OUTLET OIL SYSTEM

Proposal for additional cooling oil holes in the wheel

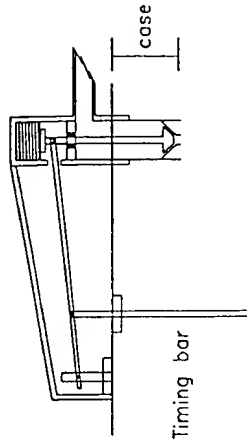
- Fig-6/25



Cooling lubricator pad  
(Detail 17)

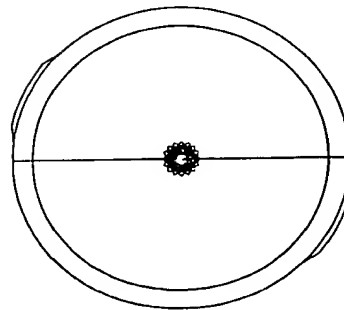
1st proposal of timing system  
for valve mechanism  
(Lower points pad circular edge)

F-7a



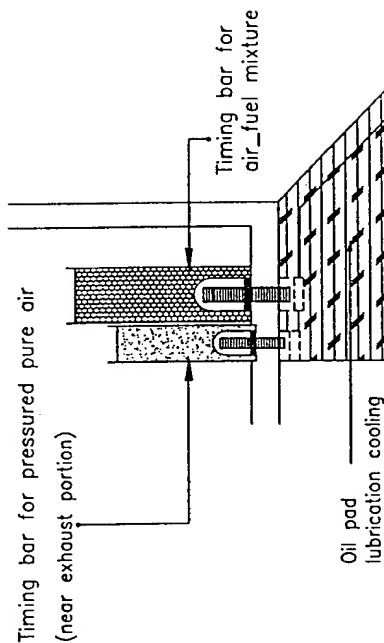
Valve mechanism  
2nd proposal

F-7c



2nd proposal of timing system  
for valve mechanism  
(higher points pad circular edge)


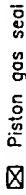
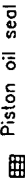
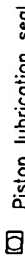


F-7d



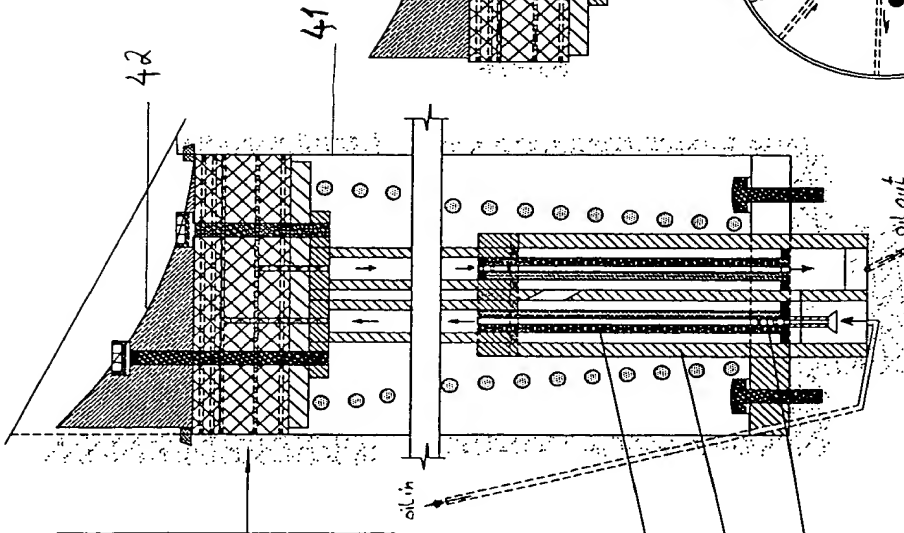
one pad - two valve timing system - d

F-7e

- Fig-7/25

-  Solid piston lock ring
-  Piston gas seal
-  Piston oil seal
-  Piston lubrication seal
-  Piston lubrication seal
-  Piston oil seal

(As particular in piston)

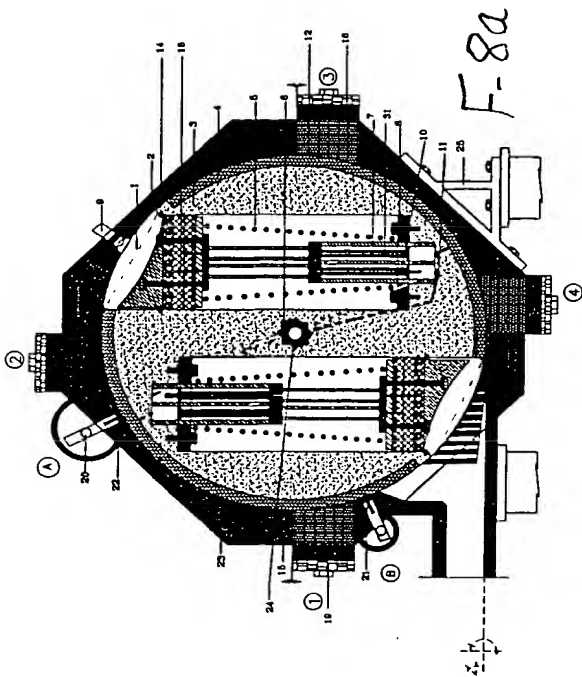


TYPICAL CYLINDER\_PISTON

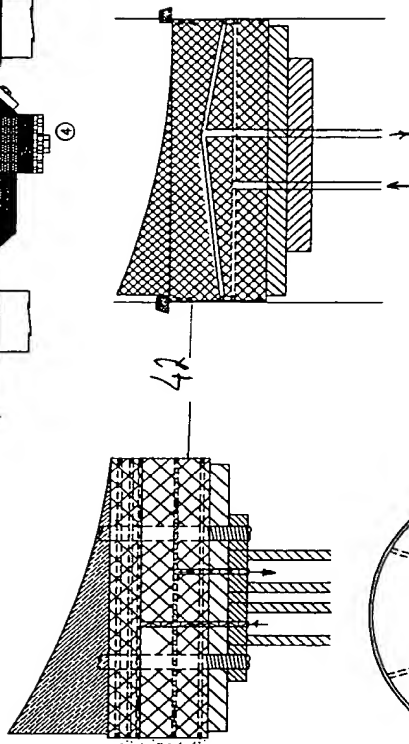
F-8b

DETAIL 22d

F-8d

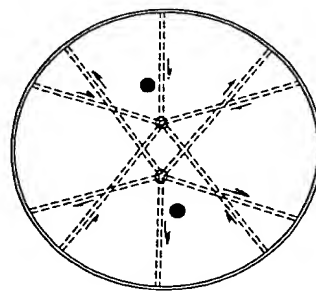


F-8a



Proposal 2  
For the piston, lubrication

F-8e

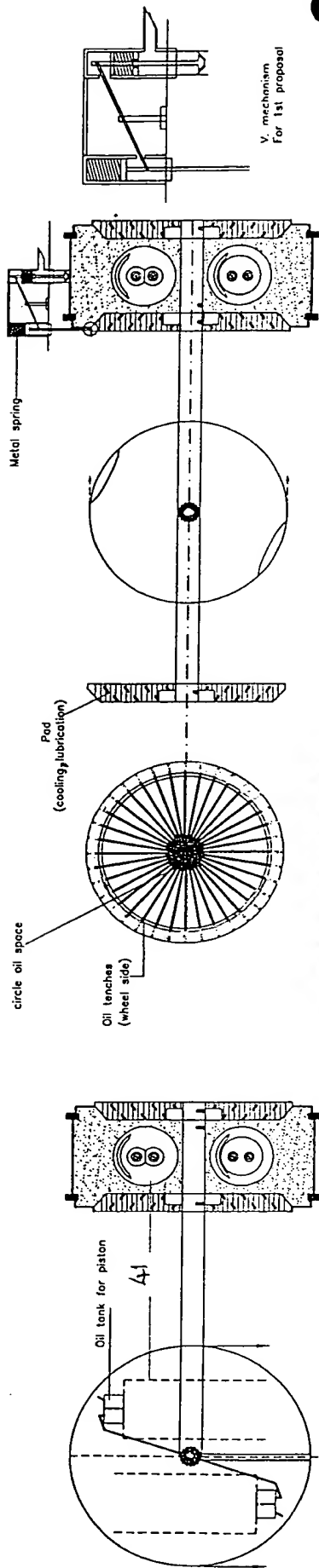


PISTON OIL CANALS DISTRIBUTION  
Scale 1 : 1.5

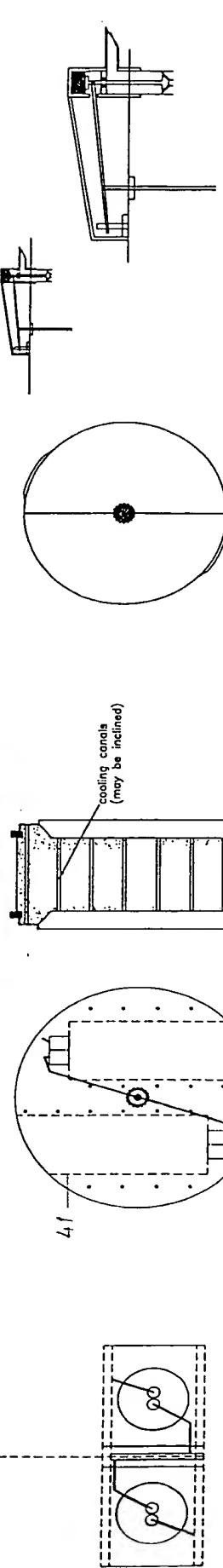
F-8c

= Fig-8/25

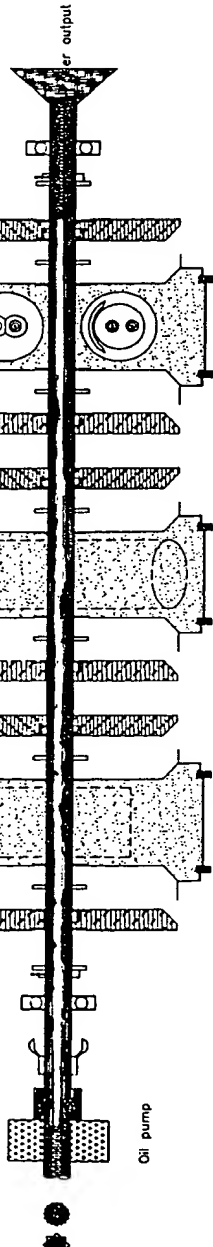
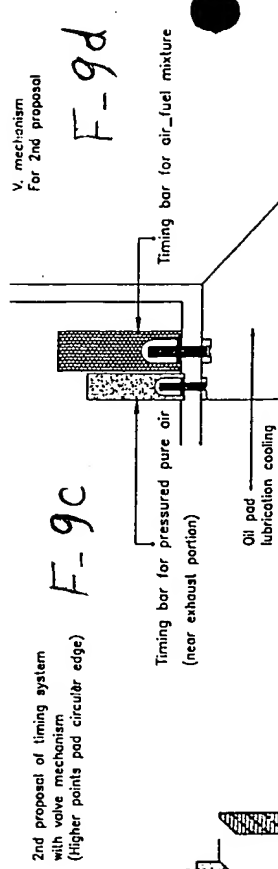




**LUBRICATION COOLING PAD**



**PISTON INLET. OUTLET. OIL SYSTEM**



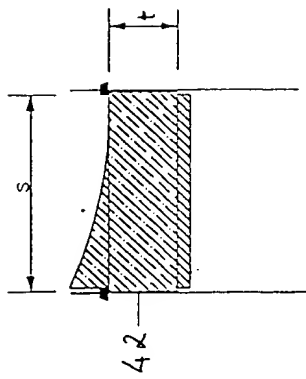
NOTE  
(Oil inlet hole on shaft as per each part it is not as per scale)

**ROTATING PARTS ANALYSIS ON THE CRANK**

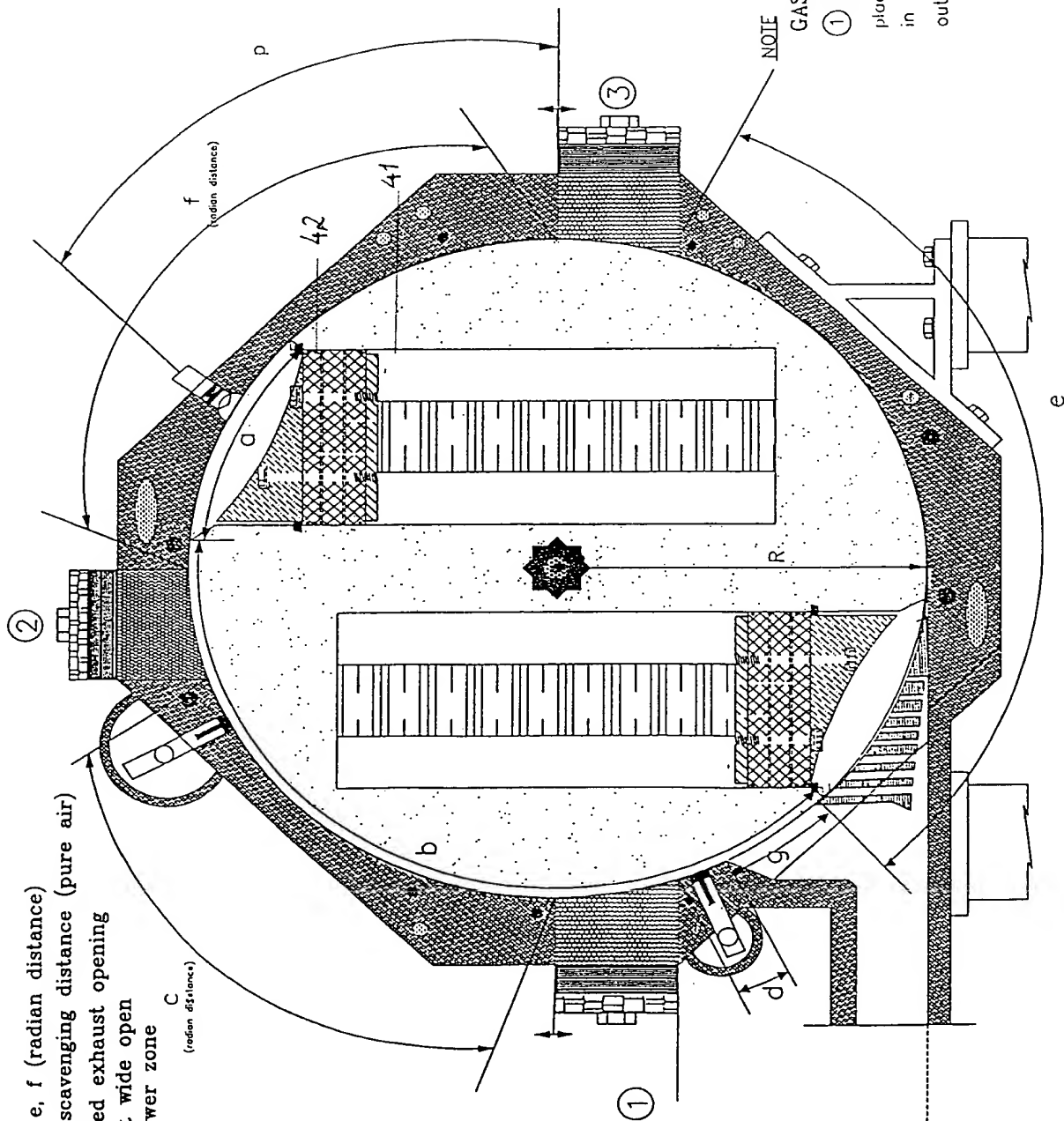
Fig - 9/25

b > c  
b > f + 1/2a  
d > a

a, b, c, e, f (radian distance)  
d: piston scavenging distance (pure air)  
e: is graded exhaust opening  
g exhaust wide open  
p: fuel power zone



t: height of piston cap  
s: diameter of piston



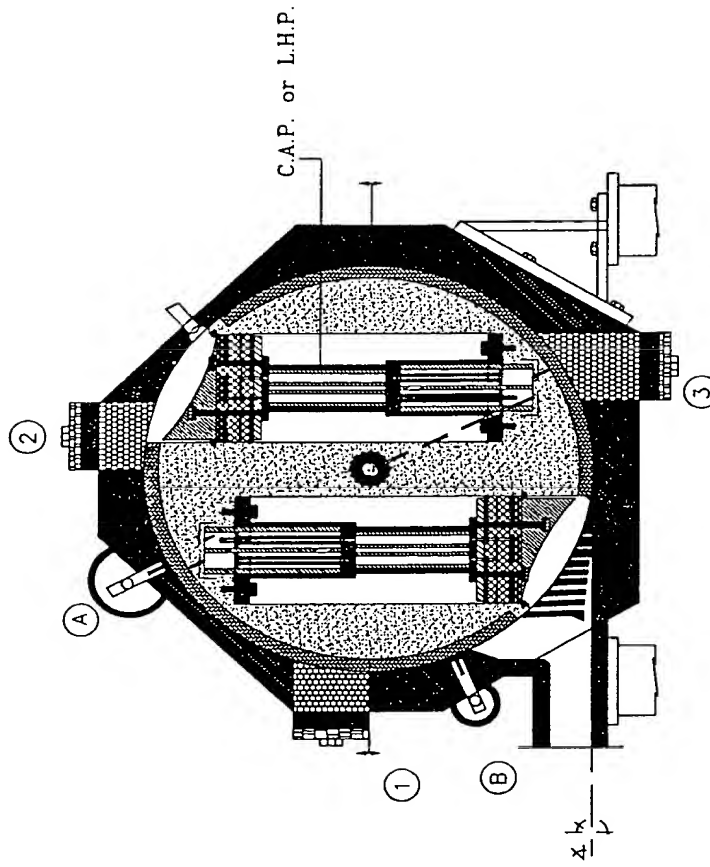
GAS SEAL MASS

NOTE  
① ② & ③ Can be replaced in different places as required and could be four pieces in suggested places depend on the outlet angle and other criterias.

SECTION A - A

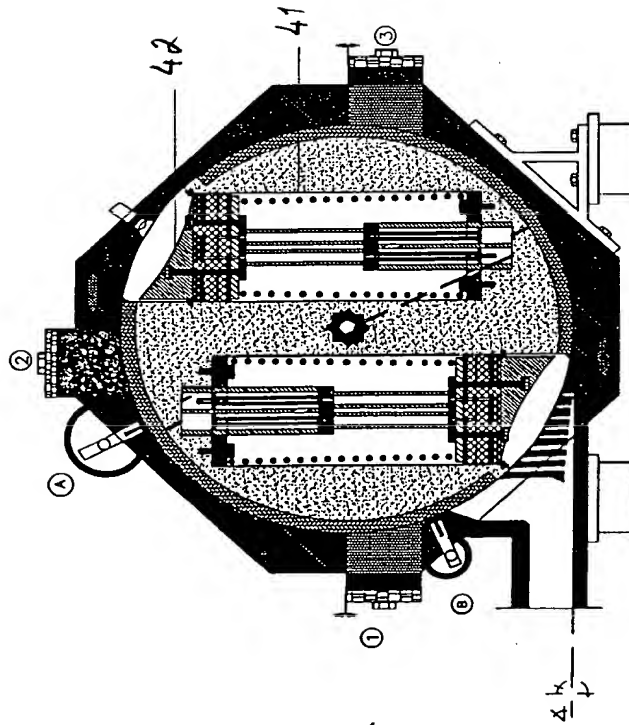
Fig-10/25

C.A.P. : Compressed Air Device.  
 L.H.P. : Liquid Hydraulic Device.



Hydraulic (device) push arm modification  
 Compressed air power modified  
 or liquid (oil) power modified

F-11 b



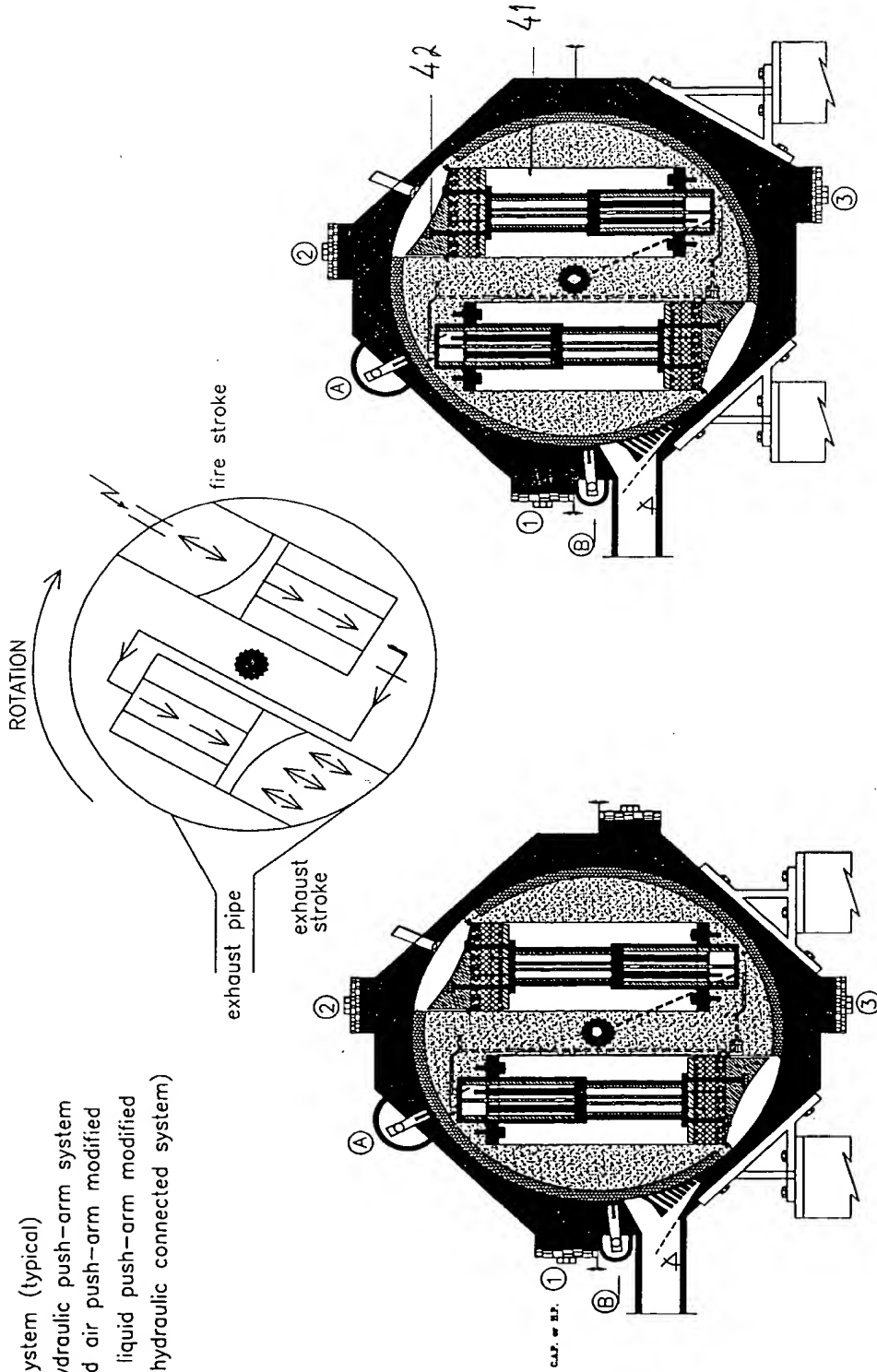
Spring push-arm modification

F-11 a

Fig-11/25

11/25

Section of system (typical)  
 Combined hydraulic push-arm system  
 Compressed air push-arm modified  
 or Hydraulic liquid push-arm modified  
 (two piston hydraulic connected system)



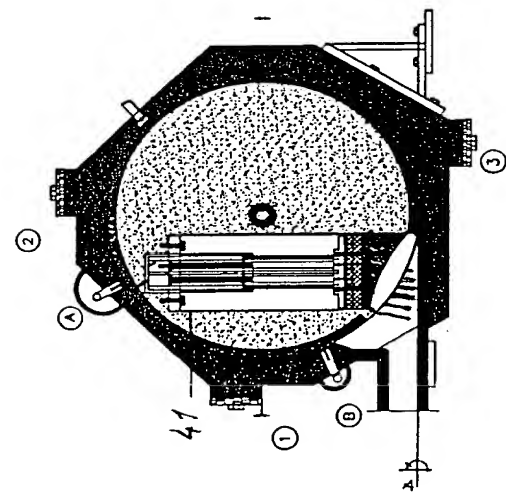
Proposal: 2

Proposal: 1

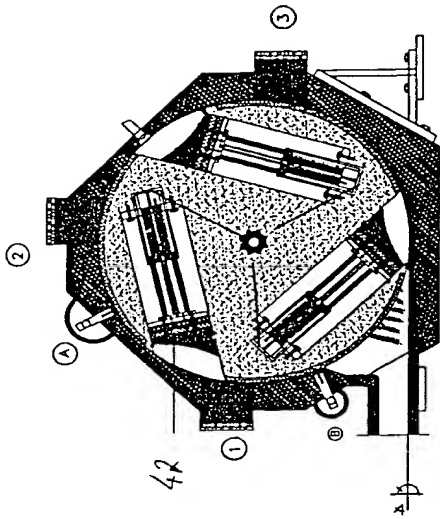
F-12b

Fig-12/25

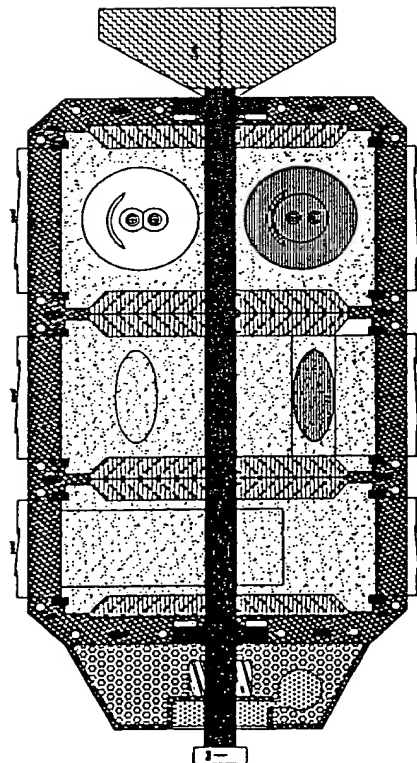
F-12a



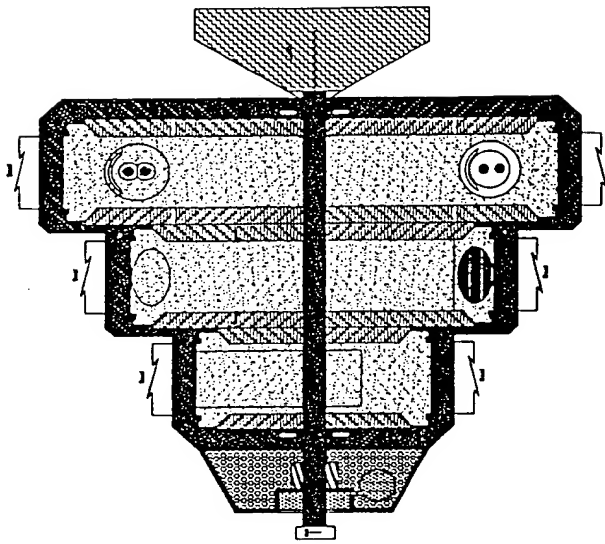
F-13a



F-13b



F-13d



F-13c

Fig-13/25

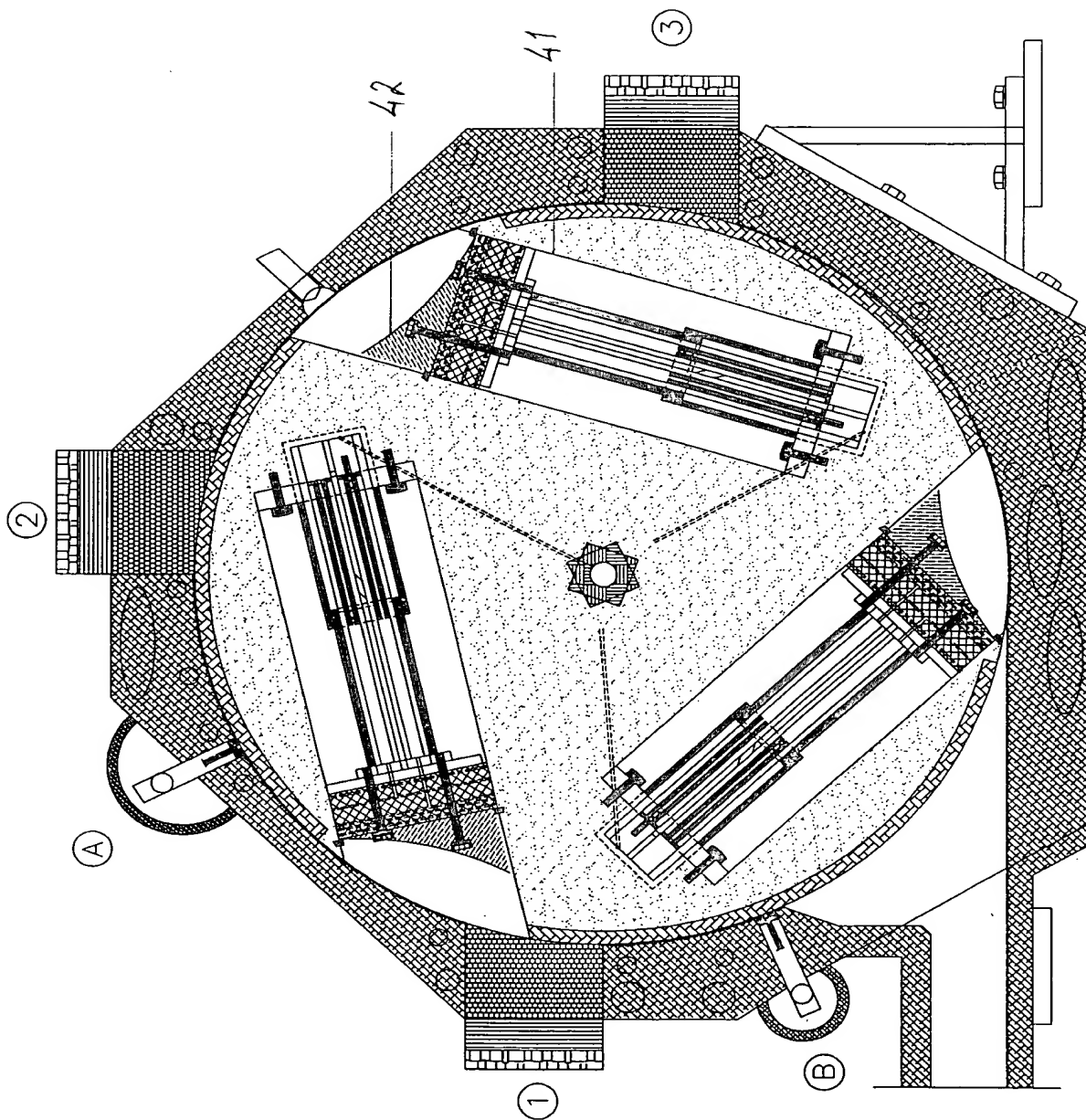


Fig - 14/25

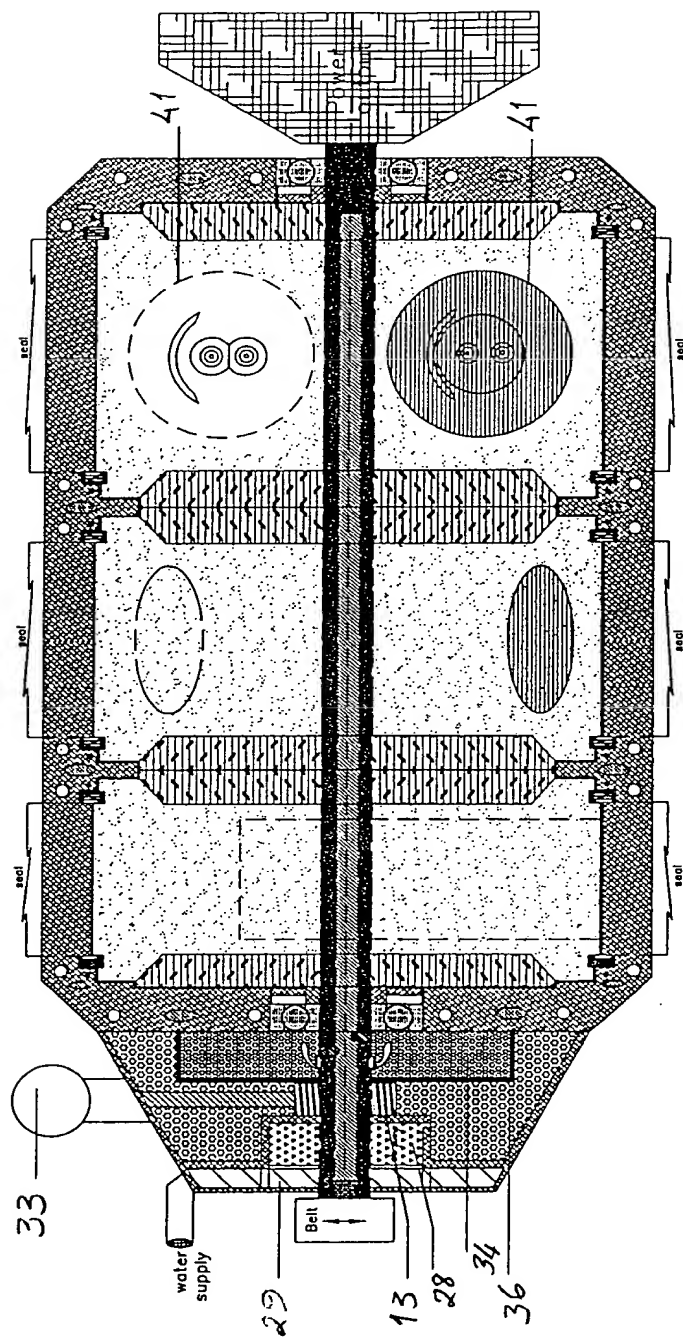


Fig-15/25

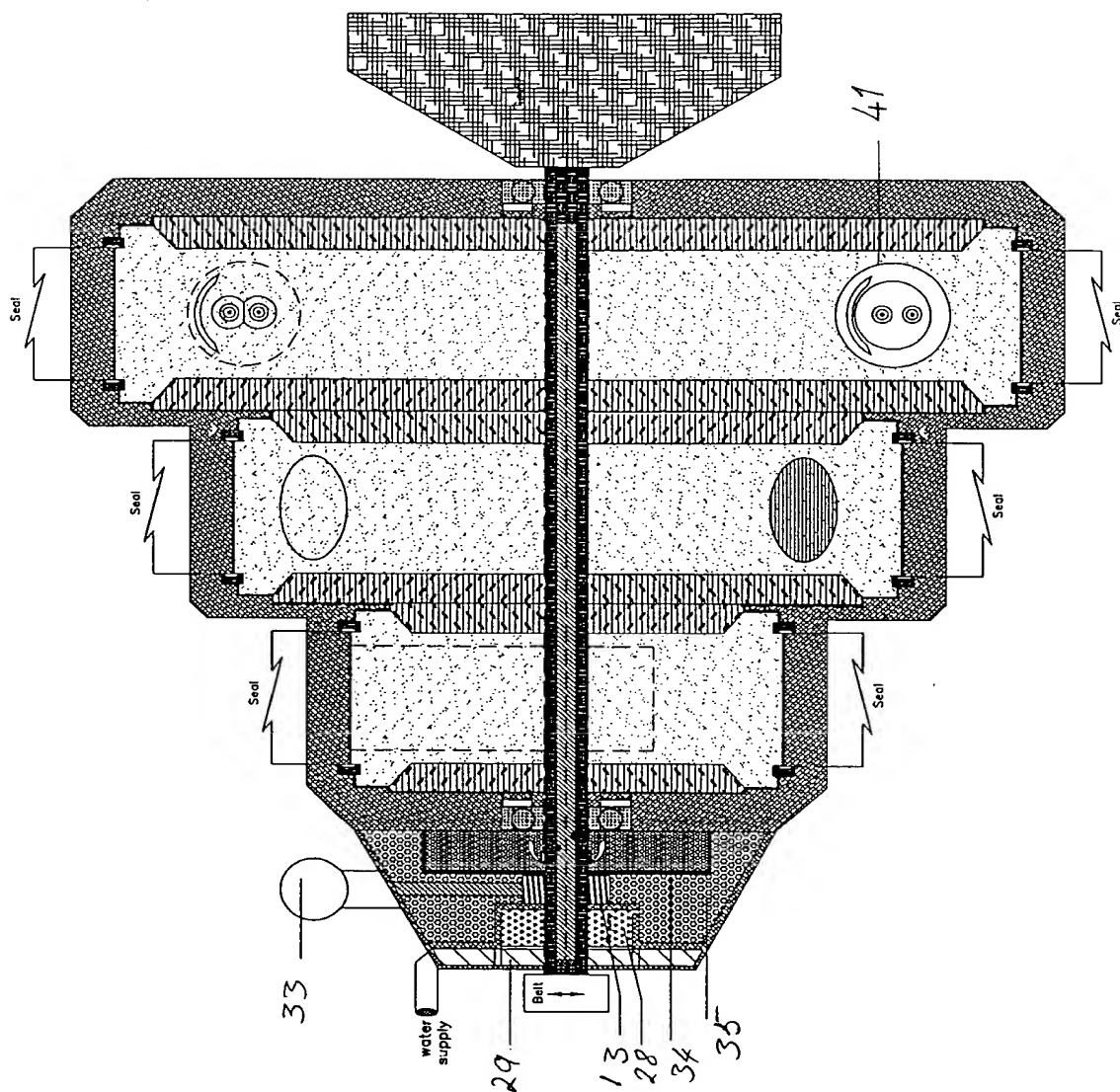


Fig - 16/25



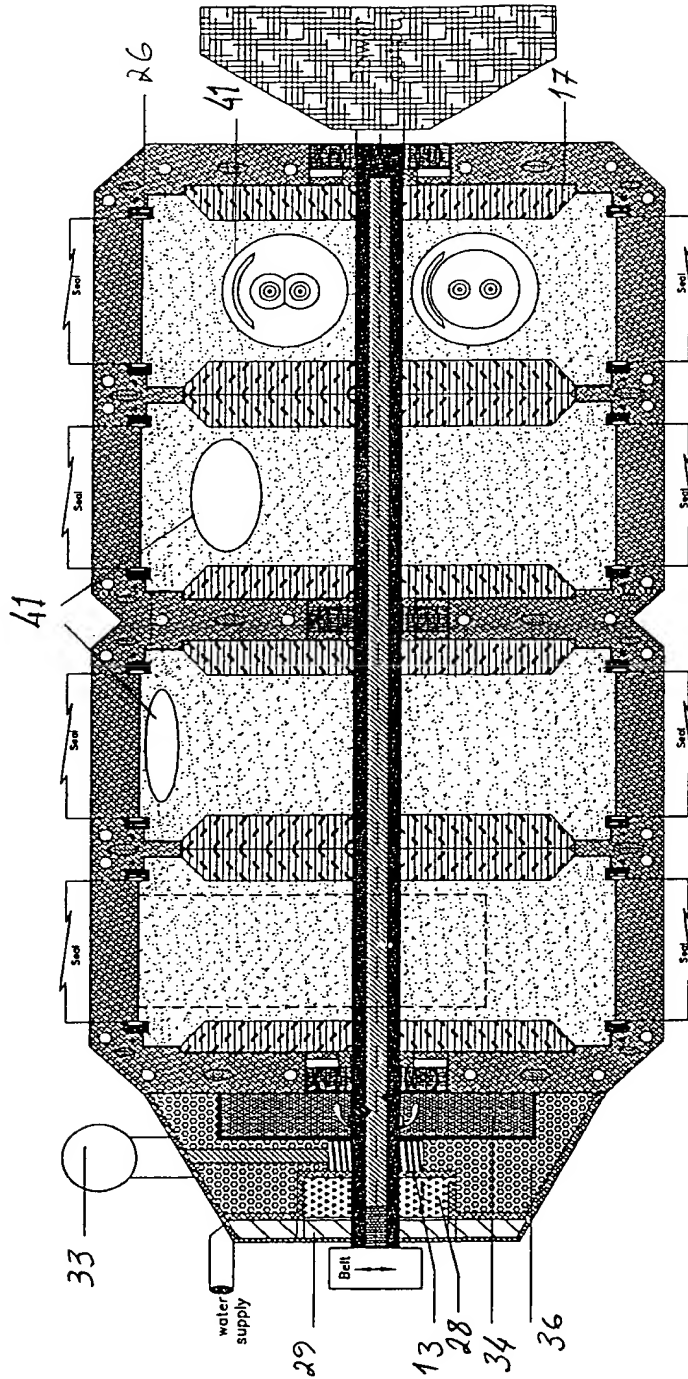
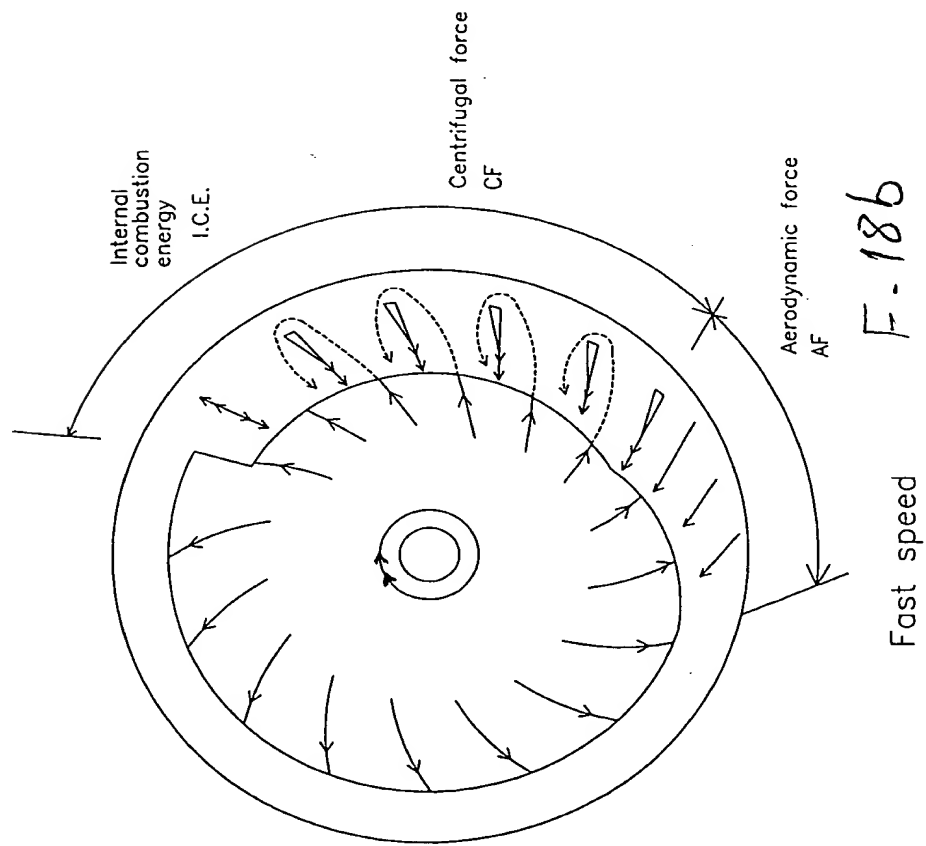
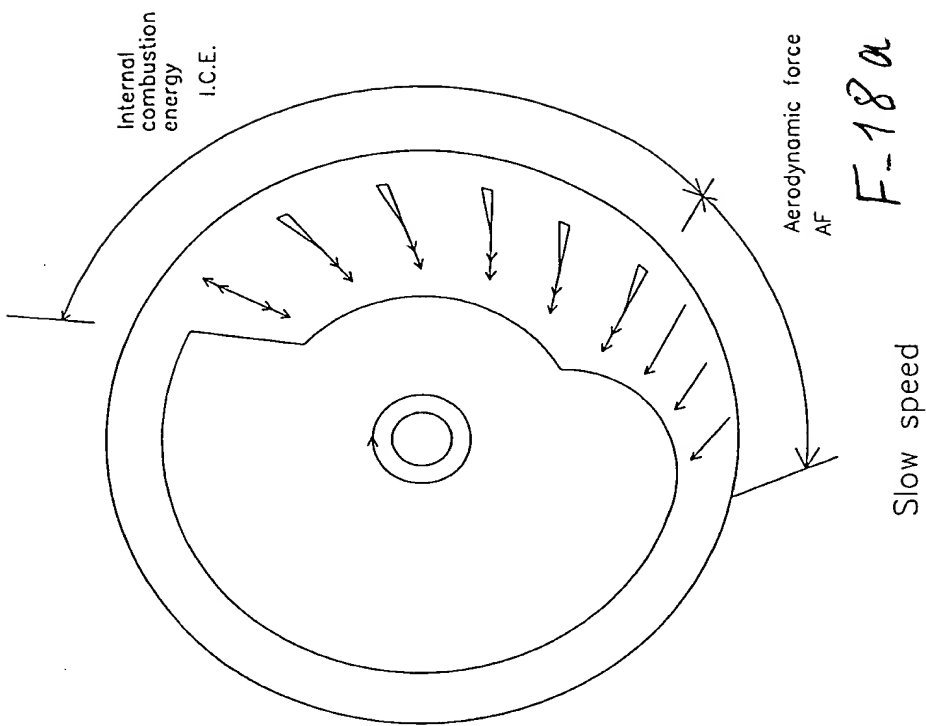


Fig-17/25

# DETAILS OF ENGINE FORCES ON PISTONS.



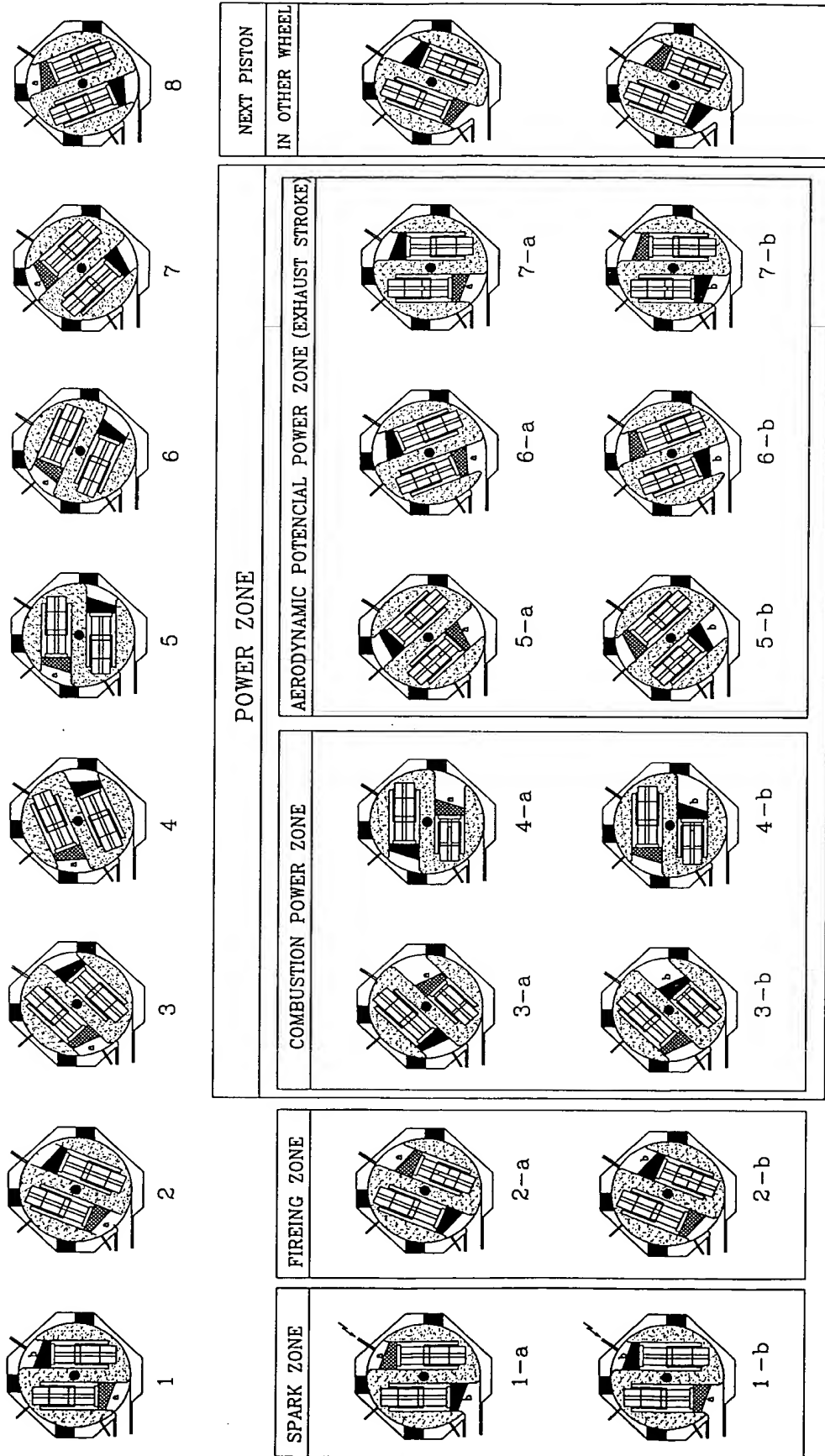
$$P = \text{I.C.E.} + \text{A.F.}$$

$$P = \text{I.C.E.} + \text{C.F.} + \text{A.F.}$$

Fig-18/25

NOTE

Component elements are not in actual scale

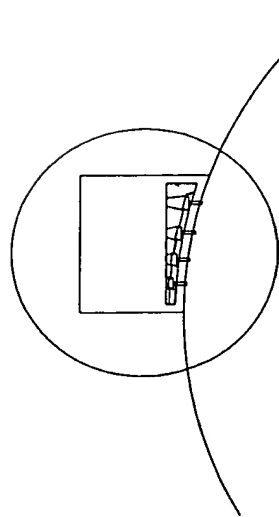


Ignition of piston  
(a) starting self  
rotation  
19/25

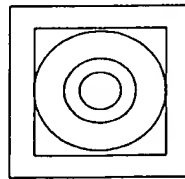
Ignition piston(b)  
continue rotation

Fig-19/25

Proposal for seal mass

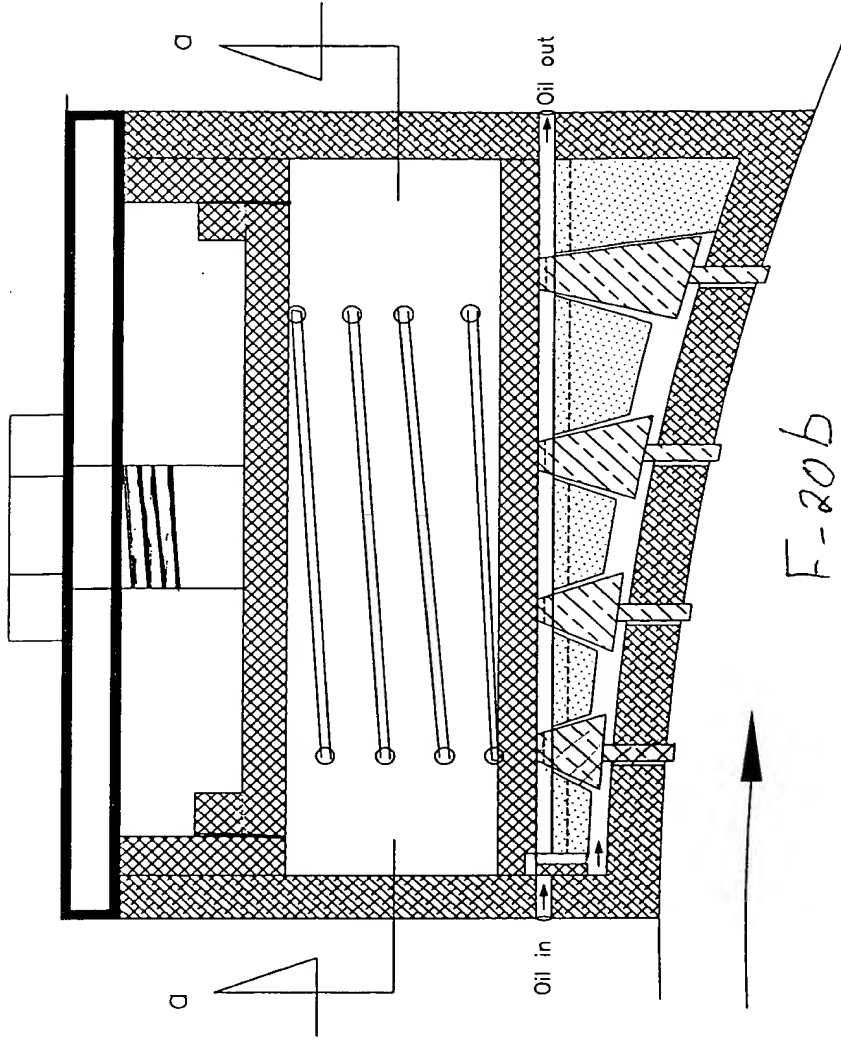


F-20a



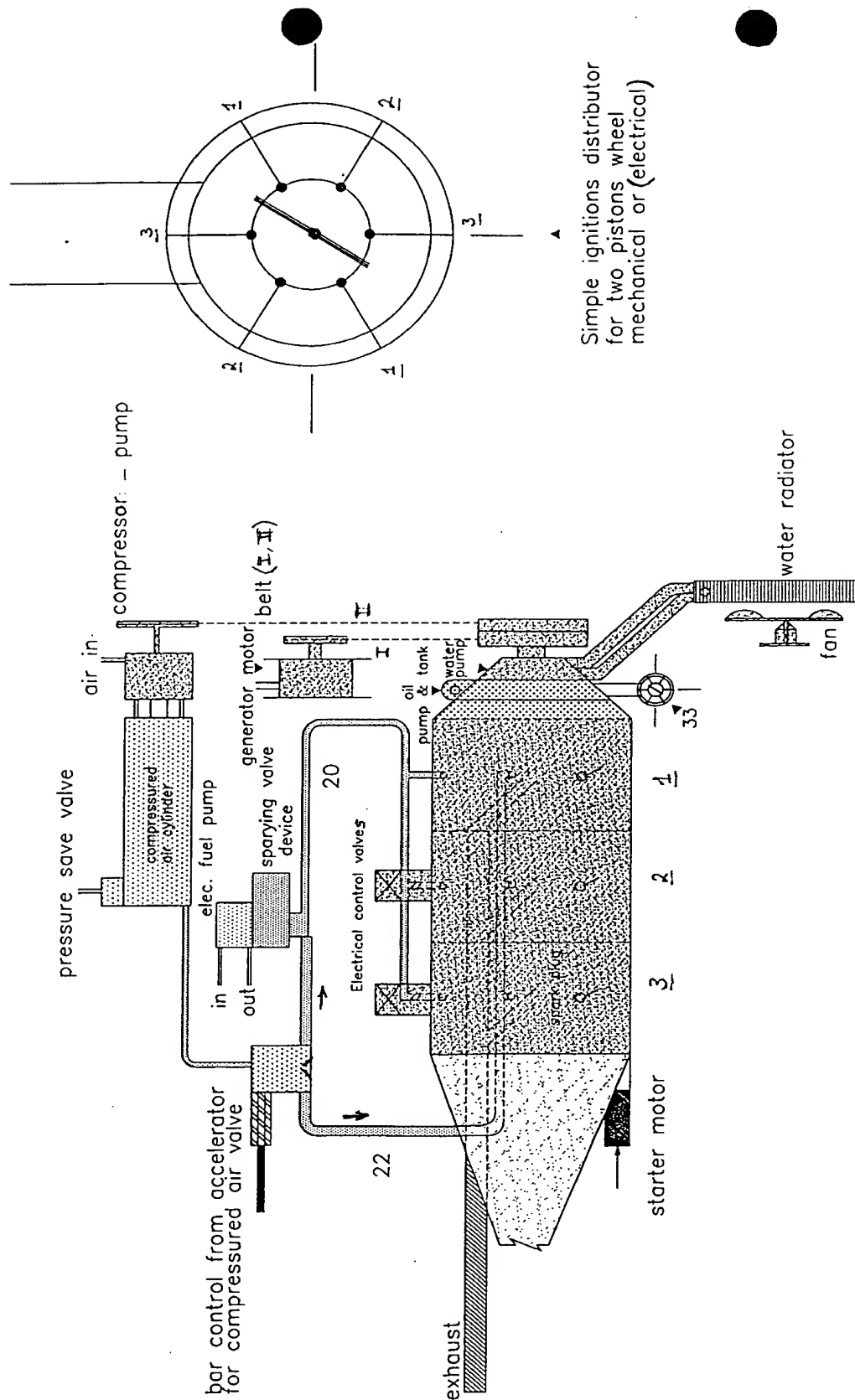
Section a - a

F-20c



F-20b

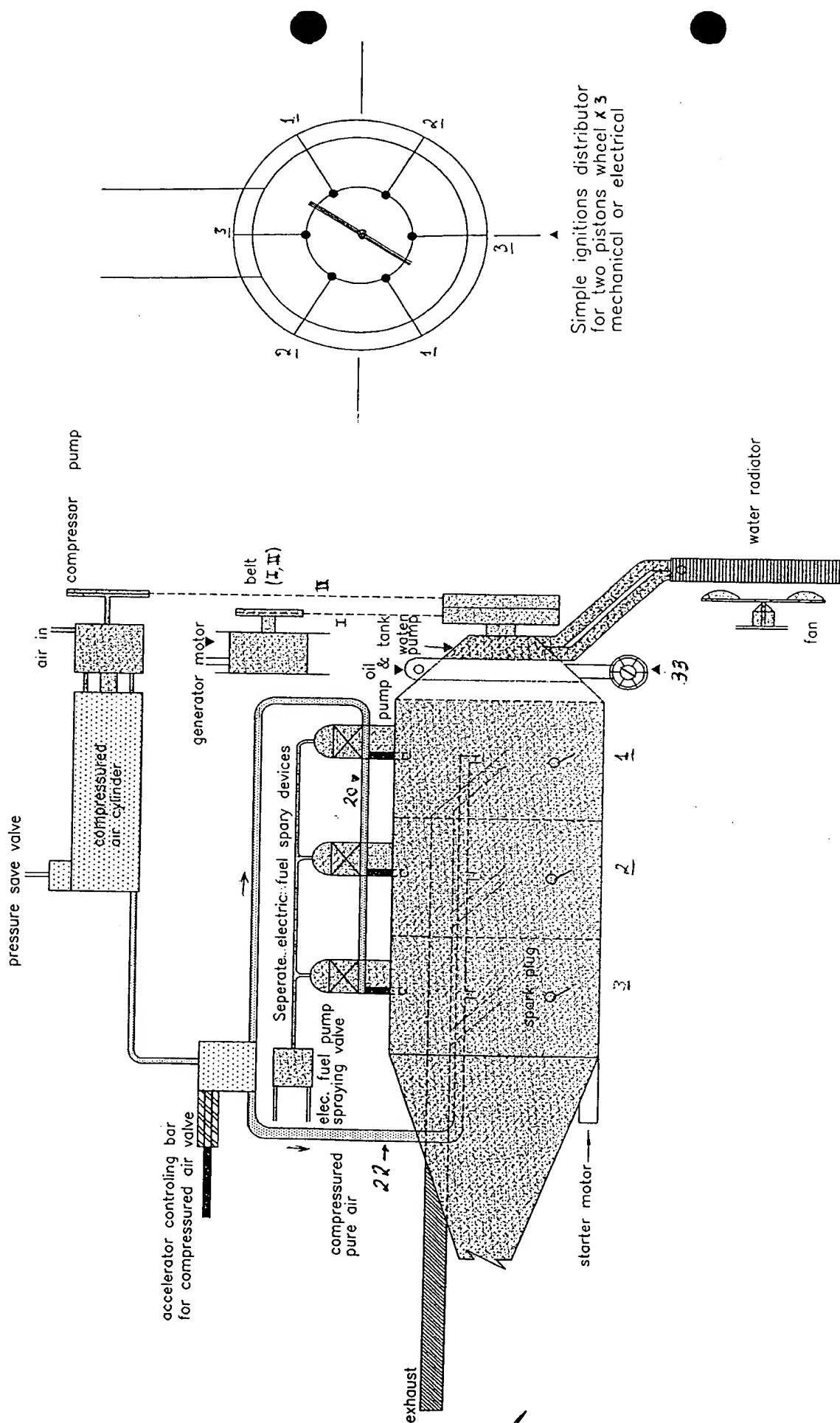
Fig. 20/25



Proposal No: 1.

Fuel spray injection for all - fuel, air-mix inlet

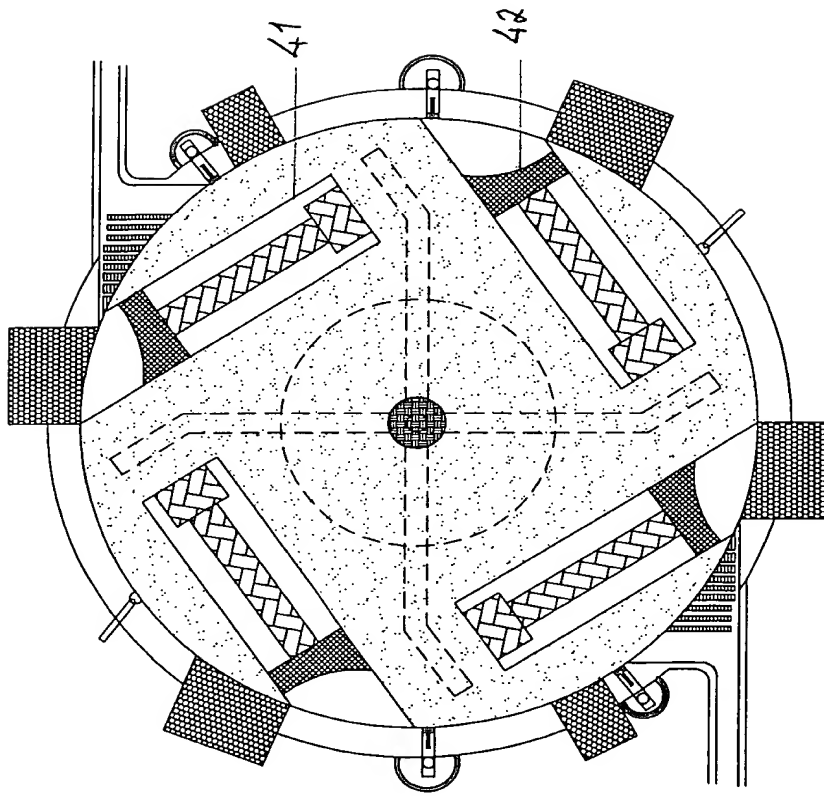
Fig - 21/25



Proposal No: 2.  
 Fuel spray injection for each energy unit: separated - fuel air-mix. inlet

Fig-22/25

Typical unit with four pistons  
 Using dual ignition system  
 Section in horizontal C.L.  
 (for vertical crank shaft)

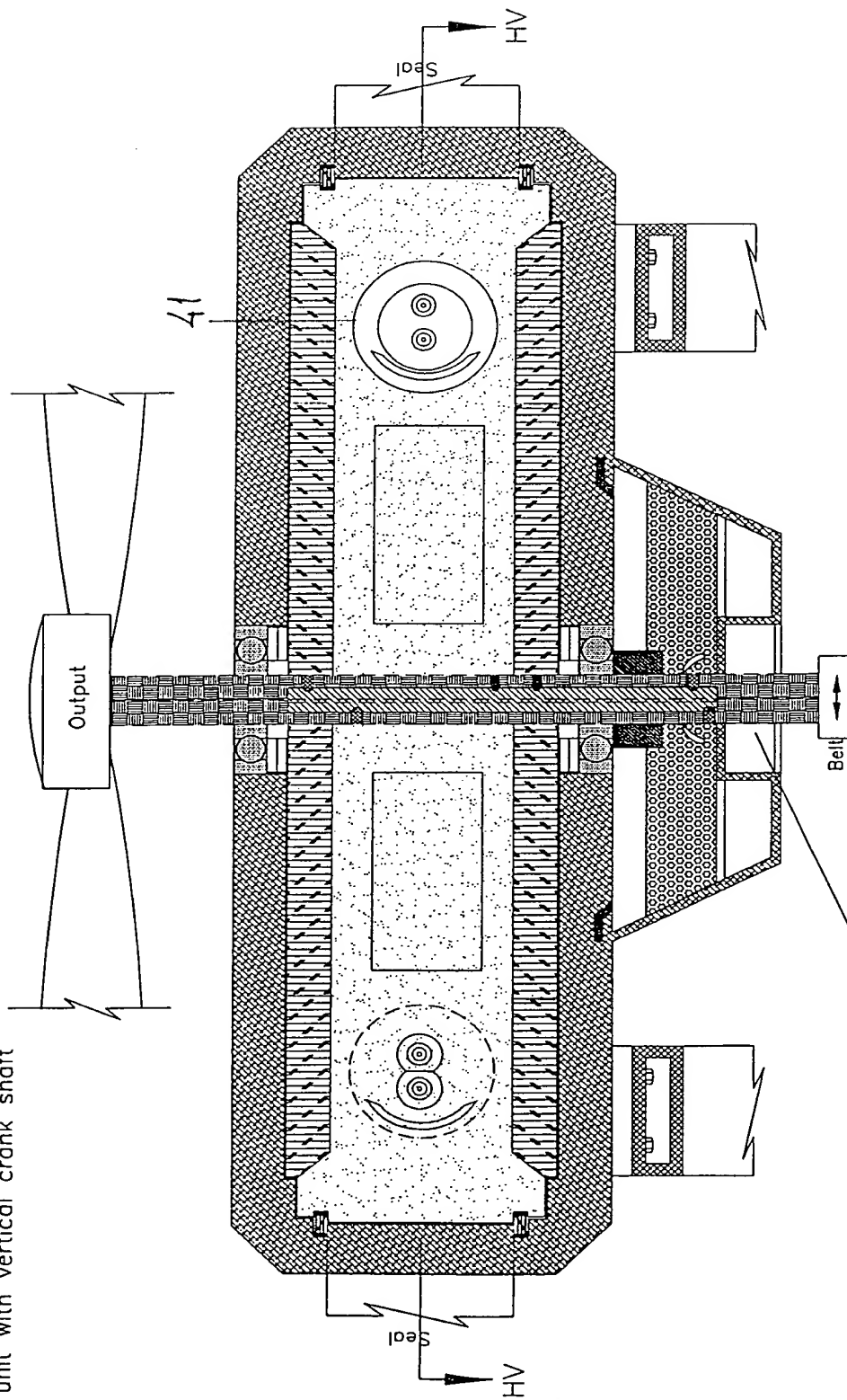


Piston cup curve as specified

section HV - HV  
 A super Power Wheel Unit  
 (Dual combustion ignition system)

Fig-24/25

Typical unit with vertical crank shaft



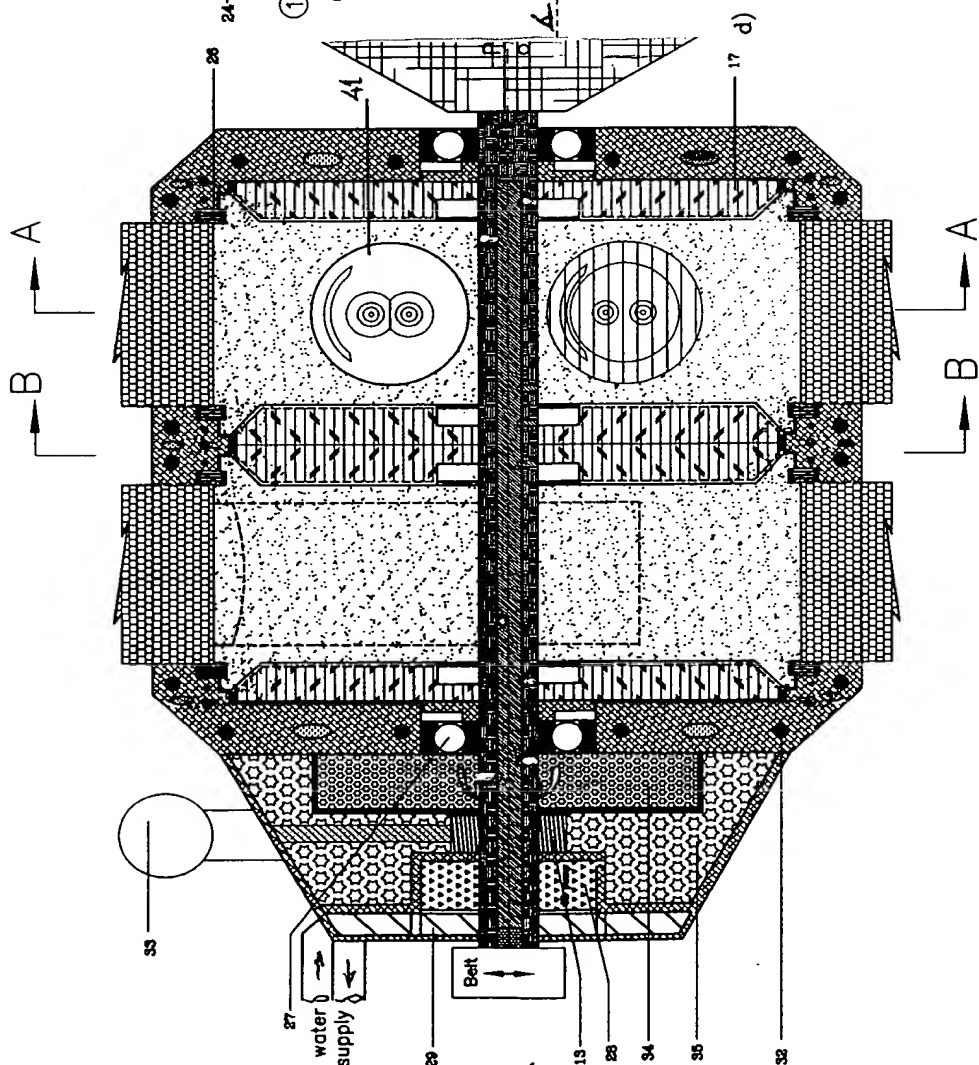
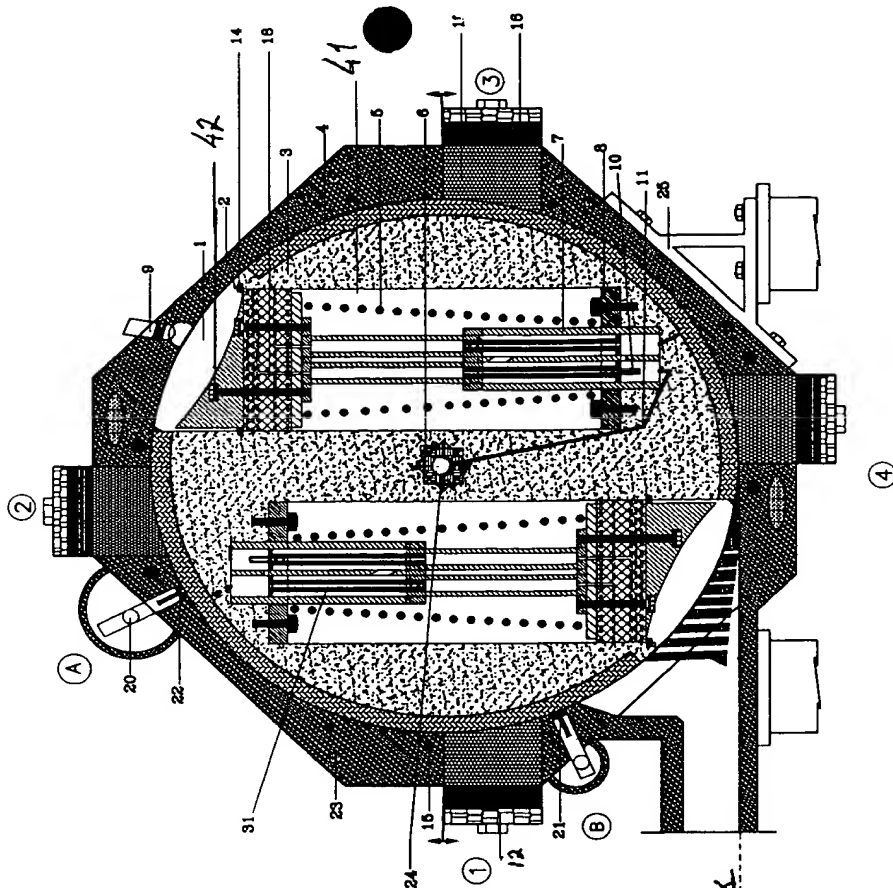
Oil pump not necessary  
(Using any oil cooling proposal)

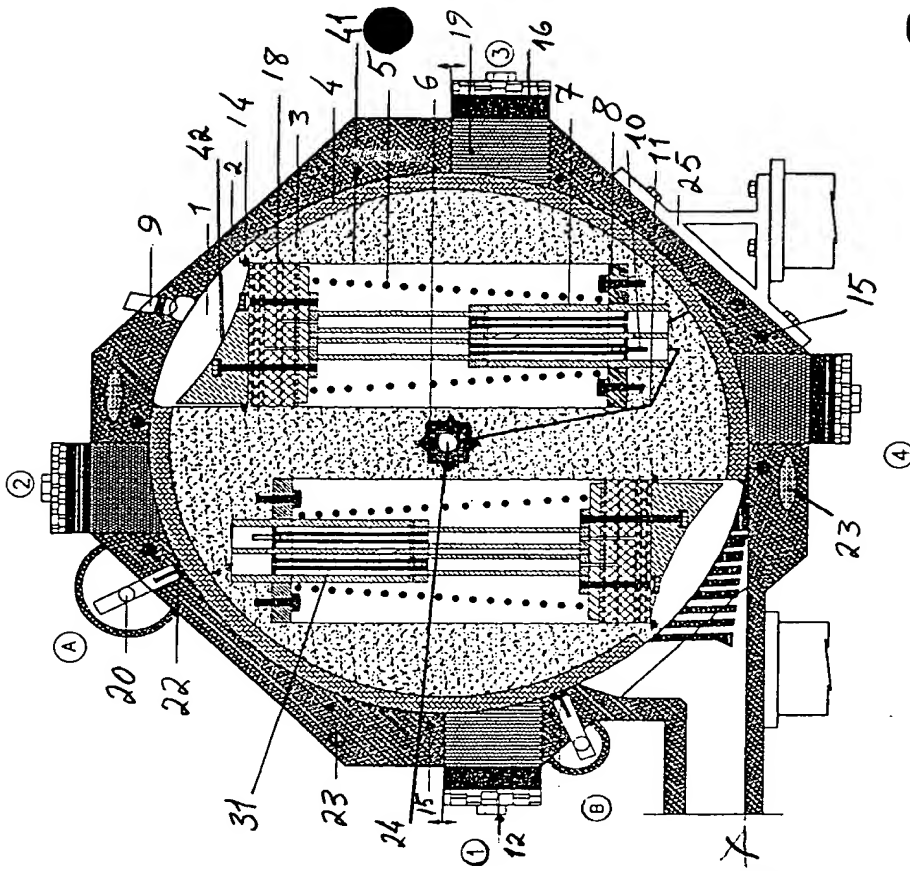
One big power wheel unit  
(One big energy unit)

Super Power Wheel Unit  
(Dual combustion ignition system or more)  
Typical Section in vertical C. L.

Fig. 23/23





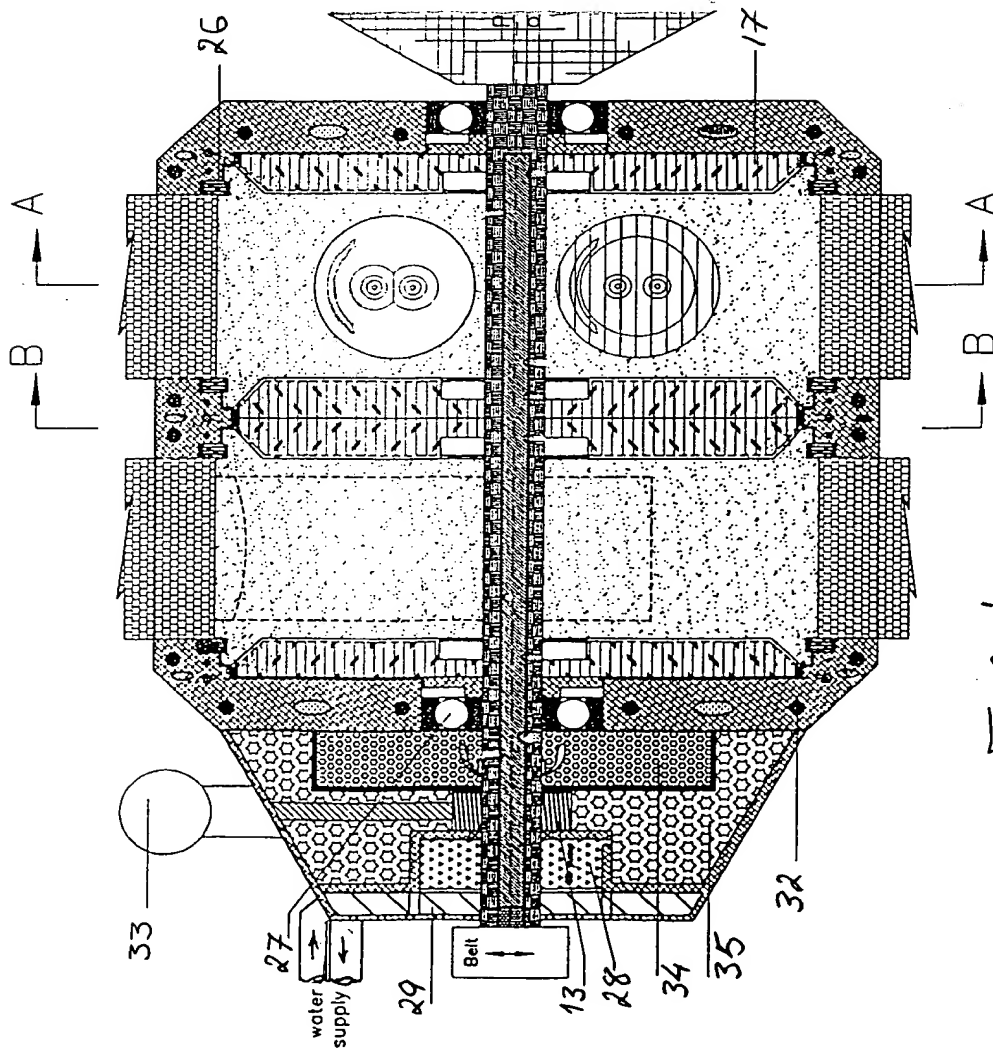


SECTION A - A

Section plan at vertical c. l. of power wheel  
(A typical spring power modified)

F-25a

Fig-25/25



TWO POWER WHEEL UNITS

Section plan at horizontal center line (sec. H-H)

F-25b

scale.